

# ANNUAL REPORT NAG5-7394

This project was granted a no-cost extension prompted by the request of the major subcontractor, the Naval Research Laboratory, which had not yet completed its tasks.

As of July 2002, they had made substantial progress. They have successfully fabricated a metal mesh grid on polyimide, and also successfully fabricated a 2-layer metal mesh infrared filter using stacks of these metal mesh grids on polyimide; the actual layering was done at SAO.

Both warm and cold spectroscopic tests were done on these fabricated devices. The measurements were in good agreement with the theory, and also reasonable performance in absolute terms.

NRL is now working on fabricating a 3-layer metal mesh infrared filter, and a prototype is expected in the next month. Testing should occur before the end of the fiscal year.

Finally, NRL has preliminarily agreed to hire a new postdoctoral person to refine the modeling of the filters based on the new measurements. The person should arrive this fall. NRL has a new Fourier Transform Spectrometer which will be delivered in the next month, and which will be used to facilitate the testing which has up to now been done in collaboration with NASA Goddard Space Flight Space Center.